



Ammi Visnaga L., a Potential Medicinal Plant. The Diuretic Activity of Ammi Visnaga: A Review of its Use in Kidney Disorders

¹Safid Halim Khan, ²Disha kailas Dhamne., ³Vaishnav ananta dinkar,

⁴Gaikwad vishvajit Subhash, ⁵Harshal Ashok Vishe

¹Research Scholar, ²Research Scholar, ³Research Scholar, ⁴Research Scholar, ⁵Assistant Professor.

¹Pharmacy,

¹Siddhis Institute of Pharmacy, Murbad, India.

Abstract: Ammi visnaga L., a biennial seasoning native to the Mediterranean area of Europe, North Africa, and Asia, is sometimes referred to as khella baldi or toothpick weed (Family Umbelliferae). The herb has long been utilised in traditional medicine. These days, it's employed as an antioxidant, antifungal, antibacterial, and larvicidal agent against mosquito larvae. It also treats several nutritional disorders similar to renal stomach pain and cardiac insufficiency. γ -pyrenes (furanochromone up to 4) were present in Ammi visnaga in the highest mixtures: khellin (0.3–1.2), visnagin (0.05–0.30), khellinol, ammiol, khellol, and khellinin. The primary component of Ammi visnaga is the pyranocoumarin visnadin (0.3), which is also present in fixed oils (up to 18) and coumarin (0.2–0.5). Ammi visnaga L. was also used to treat pyrones with success. There are several antimicrobial activities and effective smooth muscle relaxants, particularly for vascular smooth muscle. Its flavonoid concentration is what gives it its antioxidant activity, and its essential oil is said to have larvicidal, antiviral, and antibacterial properties. Its γ -pyrone component relaxes smooth muscle, particularly the coronary roads, and has a significant impact on reducing renal pain and facilitating the flow of order monuments. Because of the presence of γ -pyrones, coumarins, flavonoids, and essential oils, it offers a variety of pharmacological benefits. Additionally, the primary phyto-constituent of it, khellin, is useful for photochemotherapy of skin disorders. It possesses a furanochrome structure that is acquired by birth from the seeds of the Ammi visnaga L. In this context, studies on khellin topical distribution have grown, and focus has turned to using nanocarriers to achieve optimal khellin stability and efficacy for the treatment of many skin disorders, including vitiligo and psoriasis.

IndexTerms - Furanocoumarins, Flavonoids, Vitiligo, Psoriasis.

1. INTRODUCTION

A plant species known as Ammi Visnaga L. has been utilised for a variety of reasons in traditional medicine. The following details regarding Ammi Visnaga L. are additional. There are several uses for the plant, including in traditional and modern medicine, especially in its fruit.

Ammi visnaga L. is a Mediterranean-native condiment that grows briefly every two years or so in North Africa, Asia, and Europe. [2,3] In Egypt, the factory is mostly located in the governorates of Assiut and Minia, as well as in the Delta region that encircles the Nile River.[4] Several individuals and businesses have also grown it widely with the intention of using its extracts or active ingredients in the pharmaceutical sector[5]. The plant, particularly its fruit, has a variety of uses as a conventional or cutting-edge medication. Widely employed as flavors, spices, colors, agrochemicals, medicinal, and food additives, plants are a valuable source of secondary metabolites. The gift of medicinal plants from nature allows people to live healthy, disease-free lives. Since ancient times, people have utilised plants as medicine. [1,3] Every society in the world has a thorough understanding of herbal medicines due to the experience that has been gained over many centuries. Traditionally, Ammi visnaga was used to treat moderate anginal symptoms, as well as postoperative diseases linked to the presence of renal calculi and as a probative treatment for modest respiratory tract obstruction in asthma and bronchial asthma. Along with treating painful periods, stomach cramps, and irregular menstruation, it was also used as a diuretic and emmenagogue. Plant herbs were part of the materia medica of the ancient Chinese, Indians, and Egyptians. Many of the medications listed in the Ebers Papyrus are still in use today, such as Ammi visnaga L., a plant formerly known as Pharaoh's chuck. In an effort to preserve, improve, and disseminate the wisdom of the past, renowned

scholars like Avicenna, Al-Razi, Al-Antaki, and others mentioned a number of stores in their writings throughout the Arab Golden Age. In addition to having antispasmodic, antidiabetic, anti-inflammatory, antimutagenic, antibacterial, antioxidant, vasodilator, cardiovascular, and immunostimulatory conditioning properties, Ammi visnaga L. has a variety of pharmacological benefits for the treatment of several kidney illnesses, vitiligo, and hair loss. When exposed to UV radiation (365 nm), kelvin forms a chemical compound with DNA to demonstrate its exertion. Khellin helps with vitiligo, pompholyx, and psoriasis. For these illnesses, photochemotherapy with psoralen- ultraviolet A (PUVA) is the first line of treatment.

2. History of Ammi Visnaga.

Ammi visnaga is a member of the carrot family's genus of flowering herbs. It is also referred to by a number of common names, including khella, bisnaga, toothpick-plant, toothpickweed, and even Bishop's weed. This species is native to Asia, Europe, and North Africa, but it can be found worldwide. It grows from an upright taproot to a maximum height of about 80 centimetres, either annually or biennially. Its leaves can reach 20 centimetres in length, and they are usually oval to triangular in shape, though they can be divided into numerous tiny linear to lance-shaped segments. The inflorescence is composed of complex umbels of white flowers that resemble individual Apiaceae species. The fruit is shorter than three millimetres and has an oval, crushed body.[8]

3. Morphological Of Plant Parts.

1. **Root:** - Taproot, tapering, and branched. Brownish-grey, rough, and wrinkled. 1-2 cm in diameter 10-20 cm long
2. **Stem:** - Annual, erect, and branched. Green or purple-tinged, smooth, and hairless 30-60 cm tall 1-3 cm in diameter
3. **Leaves:** - Alternate, pinnately compound. Leaflets: 3-5, lance-shaped, serrated margins 2-5 cm long, 1-2 cm wide.fig.no. 01
4. **Flowers:** - Small, yellowish-white, and fragrant. Umbels, 2-5 cm in diameter - 5 petals, 5 stamens, and 2 carpels
5. **Fruits:** - Schizocarps, splitting into 2 mericarps. Mericarps: 5-7 mm long, 2-3 mm wide - Brown, elliptical, and ribbed
6. **Seeds:** - Small, 1-2 mm long, 0.5-1 mm wide. Brown, elliptical, and smooth.fig.no.02
7. **Other features:** - Glabrous (hairless) or slightly pubescent - No stipules (small appendages at leaf bases) [3,4].



Fig no. 01 Leaves



Fig no.02 Seed

Synonyms.

Daucus visnaga L., *Selinum visnaga* E.H.L. Krause, and *Visnaga daucoides* Gaertn. *Apium visnaga* L., *Ammi daucoides* Gaertn, *Carum visnaga* L., and Crantz [10].

Common names.

Arabic: Khella, Khella baladi; English: Pick-tooth, Tooth pick. Arabic nations refer to *A. visnaga* by a variety of names, including Khella baladi, Khella, Khellah, and Swak Al-Nabi. [10].

Biological Source.

They are the ripe, dried fruits of the Umbelliferae family, *Ammi visnaga* L. [10].

Geographical Source.

The herbs originate from Egypt's Nile Delta. In South America, it has been grown in Egypt and Chile. [10].

4. Macroscopic Characters: Through, it is an umbelliferous fruit, very few cremocarps are entire. Otherwise, they occur as separate mericarps.

The latter are plano-convex in shapes and ovoid- lanceolate in appearance. Mericarp shows 5 primary ridges and 4 secondary ridges

- **Color-** Fruit Greenish-brown
- **Odour** Characteristic
- **Size** Fruit length 2-2.5 mm, width 0.7-1.2 mm, thickness 0.8-1 mm
- **Taste-**The drug first gives a sweet taste followed by an intentionally bitter taste. The fracture is smooth but tough and flexible in moist drug. [10]

Extraction & Modification

Extraction methods for *Ammi visnaga* L. include:

1. **Solvent extraction:** Using solvents like ethanol, methanol, or hexane to extract the active compounds.
2. **Steam distillation:** To extract essential oils containing khellin and visnagin.
3. **Supercritical fluid extraction (SFE):** Using high pressure and temperature to extract the active compounds with a solvent like carbon dioxide.
4. **Hydro distillation:** To extract essential oils and other volatile compounds.

The extracted compounds have been reported to have various biological activities, including:

- Anti-inflammatory
- Antispasmodic
- Antimicrobial
- Antioxidant
- Cardiovascular protective effects

Modifications of *Ammi visnaga* L. involve altering the chemical structure of its active compounds to enhance their pharmacological activities, stability, or bioavailability. Some modifications include:

1. Alkylation: Adding alkyl groups to Khellin or visnagin to increase lipophilicity.
2. Acylation: Adding acyl groups to improve solubility or bioavailability.
3. Glycosylation: Attaching sugar molecules to khellin or visnagin to enhance solubility.
4. Hydroxylation: Introducing hydroxyl groups to increase water solubility.
5. Methylation: Adding methyl groups to alter biological activity.
6. Sulfonation: Adding sulfonate groups to improve water solubility.
7. Amidation: Converting carboxyl groups into amides to alter biological activity.
8. Esterification: Converting carboxyl groups into esters to improve lipophilicity.

These modifications aim to:

- Enhance anti-inflammatory activity
- Improve cardiovascular protective effects
- Increase antimicrobial activity
- Enhance antioxidant activity
- Improve bioavailability and stability

Some specific examples of modified *Ammi visnaga* L. compounds include:

- Khellin- β -D-glucoside (a glycosylated derivative with improved solubility)
- Visnagin-3'-O- β -D-glucoside (a glycosylated derivative with enhanced bioavailability)
- Furanochromone-6-carboxylic acid (a modified compound with increased antioxidant activity)

5. Chemical component Constituents.

Ammi visnaga L. is rich in fatty acids, essential oils, phenolic compounds, and γ -pyrones. The portion of the plant under study, the growth environment, and the presence of any bioregulators all affect the quantity and quality of these secondary metabolites. [10 molecular]

The chemical constituents of *Ammi Visnaga* L. can be categorized into several groups:

1. γ -Pyrone:

- 4-Norvisnagin: a benzopyrone derivative with anti-inflammatory properties.
- Ammiol: a benzopyrone derivative with anti-inflammatory properties
- Khellin (0.3-1.4%): a benzopyrone derivative with anti-inflammatory and antispasmodic properties
- Khellinol: a benzopyrone derivative with anti-inflammatory properties
- Khellol: a benzopyrone derivative with anti-inflammatory properties
- Visamminol: a benzopyrone derivative with antioxidant properties
- Visnagin (0.1-0.7%): a benzopyrone derivative with anti-inflammatory and antioxidant properties.

2. Phenolic compounds:**2.1 Flavonols**

- Quercetin-3-glucoside: a flavonoid with antioxidant and anti-inflammatory properties.
- Kaempferol-3-glucoside: a flavonoid with antioxidant and anti-inflammatory properties.
- Isorhamnetin 3- β -d-glucoside: a flavonoid with antioxidant and anti-inflammatory properties.
- Rhamnetin-3-O-glucoside: a flavonoid with antioxidant and anti-inflammatory properties.

2.2 Isoflavones

- Pimolin: a flavonoid with antioxidant and anti-inflammatory properties.

2.3 Flavones:

- Khellinone: a flavonoid with antioxidant and anti-inflammatory properties
- Visnaginone: a flavonoid with antioxidant and anti-inflammatory properties.

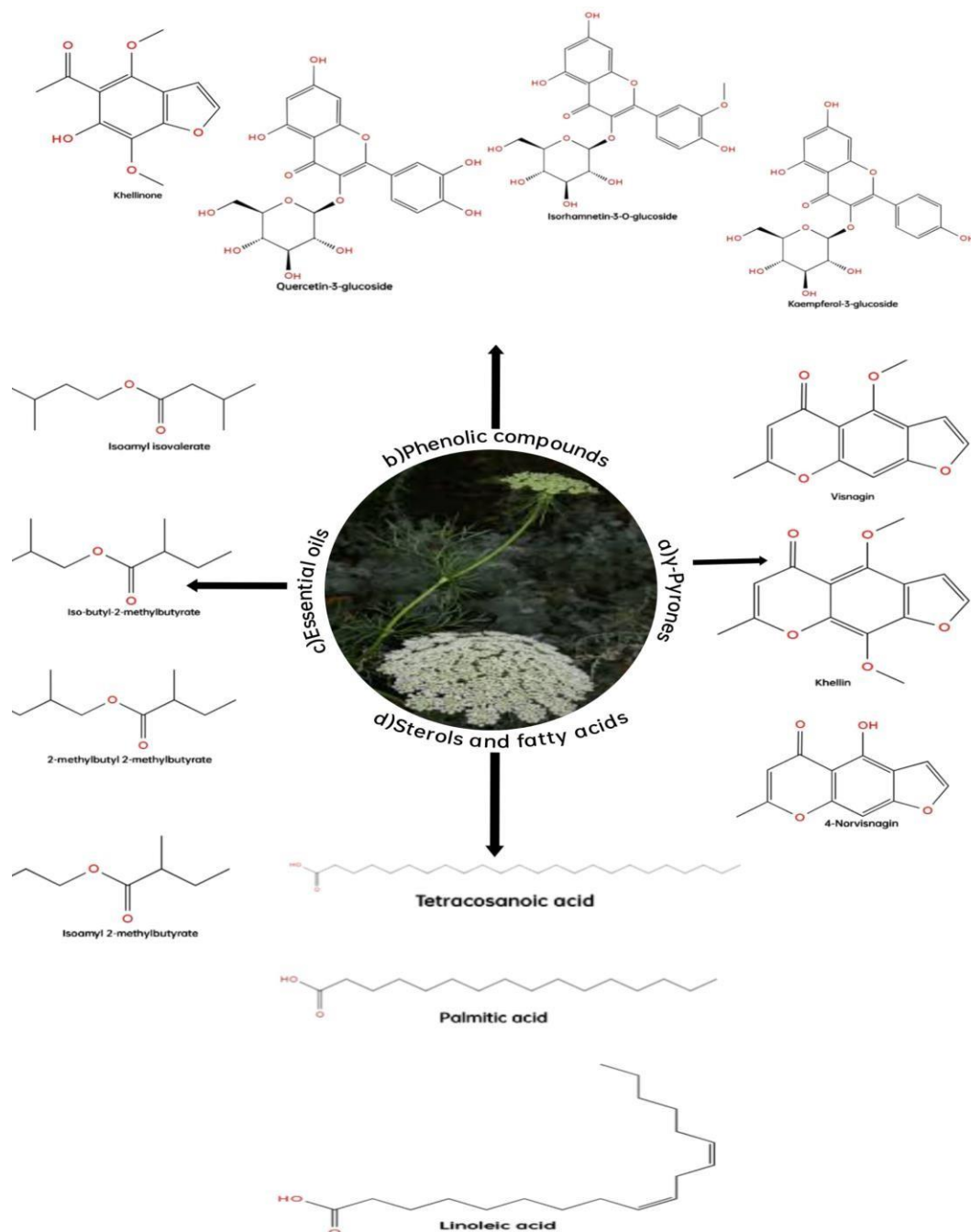
3. Essential oils:

- Isoamyl 2-methylbutyrate: a fatty acid ester with antimicrobial properties
- Isoamyl isobutyrate: a fatty acid ester with antimicrobial properties
- Iso-butyl-2-methylbutyrate: a fatty acid ester with antimicrobial properties
- 2-Methylbutyl 2-methylbutyrate: a fatty acid ester with antimicrobial properties
- 2-Methylbutyl isobutyrate: a fatty acid ester with antimicrobial properties
- Isoamyl isovalerate: a fatty acid ester with antimicrobial properties.

4. Sterols and fatty acids:

- Palmitic acid: a saturated fatty acid with antimicrobial properties.
- Palmitoleic acid: a monounsaturated fatty acid with antimicrobial properties.
- Stearic acid: a saturated fatty acid with antimicrobial properties.
- Petroselinic acid: a monounsaturated fatty acid with antimicrobial properties.
- Linoleic acid: a polyunsaturated fatty acid with anti-inflammatory properties.
- Linolinic acid: a polyunsaturated fatty acid with anti-inflammatory properties.
- Arachidic acid: a saturated fatty acid with antimicrobial properties.
- Tetracosanoic acid: a saturated fatty acid with antimicrobial properties.

These chemical constituents contribute to the medicinal properties of Ammi Visnaga L., including anti-inflammatory, antioxidant, anti-allergic, and antimicrobial activities. However, it's important to note that the exact composition may vary depending on factors like plant origin, climate, and extraction methods.



6. Traditional uses.

Treatments for *Ammi visnaga* L. include allergies, asthma, and cardiovascular disease. A diuretic and an antispasmodic have also been applications for treatment for minor symptoms involves using the fruit of *Ammi visnaga*. Asthma patients with moderate pneumonia, bronchial asthma, or chronic bronchitis can also benefit from its use in treating postoperative disorders linked to urinary retention. treatment for digestive and gastrointestinal issues. When consumed intoxicated, it serves as an emmenagogue, diuretic, vertigo remedy, diabetic remedy, and judgemental monument. Additionally, it is a well-researched treatment for urinary tract infections that occur after surgery and for mild depression of respiratory conditions like asthma or chronic bronchitis. Treatments for vitiligo and psoriasis also involve the use of plant extracts. It is frequently used to make sure that high blood pressure does not impact the bronchi, urine, or blood vessels. Another remedy for headache relief is a steep corridor infusion [6,7].

7. Medicinal Uses A] Skin diseases

A relatively prevalent dermatological condition that affects 0.5–2% of people worldwide, vitiligo can have major psychological effects [18,19]. A combination of environmental and genetic factors can cause vitiligo by inciting an immunological response against the skin's melanocytes. Melasma is a hyperpigmented disorder that mostly affects the face. Among pigmentation diseases,

vitiligo (hypopigmentation or depigmentation) and melasma (hypermelanosis) are highly prevalent [20]. The only somewhat effective off-label therapies for vitiligo currently available are non-targeted immunosuppressants. A deeper comprehension of illness aetiology is necessary to find novel therapeutic targets and aid in the development of safe and efficient therapies. Authoritative cytotoxic T lymphocytes contribute to skin pigmentation through melanocyte death throughout the disease's aetiology. These melanocytes develop and move to the epiderms, where they serve as the

primary source of melanocytes in the epidermis, according to 2002 research [21]. In addition to inducing melanogenesis, khellin permits melanocytes that are untouched by vitiligo to go to the epidermis and multiply. Consequently, research has demonstrated that khellin is highly beneficial in treating vitiligo by restoring the melanocyte and melanin loss that is the root cause of the condition. The effectiveness of khellin as an oral vitiligo therapy was established in the 1980s, and excellent outcomes were attained.

B] Nanocarrier systems.

There is research on Ammi visnaga L.'s traditional medical applications, homoeopathic formulations, and contemporary delivery methods for the treatment of vitiligo and psoriasis. Studies on the use of khellin in topical nanodrug delivery systems for the treatment of various skin conditions have grown recently, particularly. Table 1 lists the skin disease treatments that Khellin includes in their nanocarrier systems. There have also been studies using khellin in conjunction with liposomes, a subclass of nanosome. Hair follicles are believed to be a prime target for liposomes based on phosphatidylcholine. 2003 saw the completion of an open-label research to examine the effectiveness of khellin encapsulated in phosphatidylcholine liposomes and a UVA/UVB combination (KLUV combo). Following an average of twelve months of therapy, 72% of the treated regions showed 50% to 100% repigmentation. There was hardly any repigmentation in the control group that received only UVA/UVB treatment. Future research may also load khellin into various nanocarrier systems, such as nanoparticles, nanogels, and nanofibers, in addition to current investigations. Modifiable for targeting, nanoparticles are stable nanocarriers. They may carry a lot of drugs because of their vast surface area. Nanoparticles are the perfect drug carrier systems for both hydrophobic and hydrophilic medications because of their capacity to increase solubility. Smart nanoparticles with specific targeting can collect in large quantities deep into the hair follicle [22]. The residency time of nanoparticles in the hair follicle is ten times longer than that of the stratum corneum, per a study [23]. Nanoparticles can enter hair follicles at deep points and gather there, accumulating in the follicular aperture for an extended period of time and enter the follicular canal [24]. This demonstrates that the best way to distribute khellin to the desired location in the skin is through nanoparticles.

Disease	Nanocarrier System	Reference
vitiligo	nanosome	[25]
vitiligo	halloysite	[26]
skin diseases	microemulgel	[27]

Table 1. lists the skin conditions treated by nanocarrier systems in Khellin.

8. Dosage & warning.

Dosage:

- Traditional use: 1-2 teaspoons of dried fruit or 1/2 to 1 teaspoon of powder, 3 times a day
- Tea: 1 cup, 3 times a day (steep 1 teaspoon of dried fruit in 1 cup of boiling water for 10-15 minutes)
- Tincture: 10-30 drops, 3 times a day (1:5 or 1:10 in 45% alcohol)
- Capsules or tablets: follow manufacturer's instructions

Warnings:

- Allergic reactions: rare, but may cause skin irritation, itching, or difficulty breathing
- Pregnancy and breastfeeding: use with caution, as khellin may stimulate the uterus or affect infant growth
- Surgery: discontinue use 2 weeks before surgery, as it may increase bleeding risk
- **Medication interactions:**
 - Blood thinners (e.g., warfarin): increased bleeding risk
 - Diabetes medications: potential hypoglycaemic effects
 - Blood pressure medications: potential hypotensive effects

Side effects:

- Gastrointestinal upset (nausea, vomiting, diarrhoea)
- Headache
- Dizziness
- Allergic reactions (rare)

Contraindications:

- Known allergy to Ammi Visnaga or its constituents

- Bleeding disorders (e.g., haemophilia)
- Severe kidney or liver disease

Please consult a healthcare professional before using Ammi Visnaga, especially if you have underlying health conditions or take medications.

9. Pharmaceutical products of Ammi Visnaga L. in markets.

1. Khellin tablets or capsules (e.g., in Egypt, India, and Middle Eastern countries)
2. Visnagin tablets or capsules (e.g., in Europe and North America)
3. Ammi Visnaga extract capsules or tablets (e.g., in the United States, Canada, and Australia)
4. Khella tea or infusion bags (e.g., in Europe and North Africa)
5. Ammi Visnaga tincture or liquid extract (e.g., in the United States, Canada, and Europe)
6. Visnagin-containing creams or ointments for skin conditions (e.g., in Europe and North America)
7. Khellin-based medications for respiratory issues (e.g., in Egypt and Middle

Eastern countries) Some specific products include:

- Khellin tablets (Egypt): Khellin-100, Khellin-200
- Visnagin capsules (India): Visnagin-25, Visnagin-50
- Ammi Visnaga extract capsules (USA): Nature's Way Ammi Visnaga, NOW Foods Ammi Visnaga
- Khella tea bags (Europe): Khella Tea, Bishop's Weed Tea
- Visnagin cream (Europe): Visnagin Cream, Khellin Cream



10. Therapeuti

c Activities A]

kidney diseases.

Ammi Visnaga L. is used to treat kidney inflammation, urolithiasis and prostatic pain. Its diuretic activity helps treat nephrolithiasis and uremia. Ancient Egyptians used the fruit decoction to cure renal colic, while Iraq, Palestine, and Syria used it to treat kidney inflammation, and Algeria used it to treat urolithiasis and prostatic discomfort. When it came to treating urinary tract infections, its usage had become so widespread that it was considered the species that was most highly recommended. Numerous research works have examined the diuretic properties of *A. visnaga*, demonstrating its efficacy in managing nephrolithiasis and uremia. Commonly used in conjunction with khellin and visnagin, the primary γ -pyrones of *A. visnaga*, it is effective in treating renal diseases. Through an increase in urine pH and citrate concentration and a decrease in urinary oxalates, they have been demonstrated to protect renal epithelial cell damage from oxalate and calcium oxalate monohydrate crystals, as well as to prevent the oxalate formation linked to hyperoxaluria. Several investigators have extensively investigated the pleiotropic effects of visnagin and khellin on urolithiasis. After receiving ten days of therapy with *A. visnaga* fruit, Bhagavathula reported that a patient with recurring urethral stones recovered completely [11,12].

B] Cytotoxic Activity.

The plant has been found to have cytotoxic effects against certain cancer cell lines, including hepatocarcinoma and cervical cancer cells. After khellin was discovered in 2004, four human tumour cell lines—HT-29 for colon cancer, MCF-7 for breast cancer, HEp-2 for laryngeal cancer, and MKN-45 for gastric cancer—were used to test the cytotoxicity of the compound. The material did not exhibit appreciable cytotoxic action against the four cell lines at the measured doses, though, therefore the results were not

encouraging[13]. Hela (cervical cancer) and MCF7 cell lines were both inhibited by an ethanolic extract of *A. visnaga*. [14]

C] Anti-Microbial Activity.

Ammi Visnaga L. has been shown to inhibit the growth of various microorganisms, including *Mycobacterium tuberculosis* and *Aspergillus flavus*. For *Enterococcus faecalis*, ethanol extract had the highest minimum inhibitory concentration (MIC) value of 5 mg/ml, making it the most effective extract against Gram-positive bacteria. Furthermore, at a minimum inhibitory concentration (MIC) of 12.5 mg/ml, the same extract demonstrated antibacterial action against the Gram-negative bacteria *Escherichia coli* and *Klebsiella pneumoniae*. With a diameter of 29, 25, 25, and 25 mm for each of the four bacteria—*Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853, *Staphylococcus aureus* ATCC 43300, and *Escherichia coli*—the essential oil had the strongest antibacterial action. The oral pathogens *Streptococcus mutans*, *salivarius*, and *sanguis* were effectively inhibited by the aqueous and hydroalcoholic extract of *Ammi visnaga*'s seed and stem.

D] Anti-Inflammatory Effect.

The plant has been found to have anti-inflammatory effects, which may contribute to its neuroprotective properties which reduce in the inflammation in kidney. Research on *A. visnaga*'s anti-inflammatory properties revealed that, depending on the amount of visnagin present, it

reduced mRNA expression and released TNF α , IL-1 β , and IFN γ . Furthermore, visnagin lowered the amount of IL-6 and MCP-1 mRNA that were increased by LPS, indicating that the anti-inflammatory properties of visnagin could be attributed to the suppression of transcription factors such AP-1 and NF-Kb. Furthermore, Kwon et al. proposed that visnagin's anti-inflammatory properties are linked to its neuroprotective actions, which include inhibiting kainic acid-induced cerebral pathogenesis within the brain. [15]

E] Anti-Diabetic Activities.

The plant has been shown to possess significant hypoglycaemic effects, reducing blood glucose levels in both normal and diabetic rats. Many civilisations, such those of Palestine, Morocco, and the Sefrou area, are renowned for using *A. visnaga* as an antidiabetic drug. It has been demonstrated that giving an aqueous extract of *A. visnaga* to both normal and streptozotocin-diabetic mice significantly reduced their blood sugar levels. Furthermore, in comparison to an oral hypoglycemic drug (tolbutamide), a decoction made from the fruits of *A. visnaga* was able to lower blood glucose levels in normoglycemic rats by 51%. [16,17].

F] Vitiligo Treatment.

Ammi Visnaga L. has been used to treat vitiligo, with khellin encapsulated in liposomes showing promising results in combination with ultraviolet light therapy. According to a study by Orecchia, treating vitiligo patients with a gel formulation of khellin based upon a water/2- propanolpropylene glycol (khellin-WPG) system in conjunction with ultraviolet A (UVA) improved the patients' clinical outcomes significantly by increasing the drug's availability in the skin. It has been demonstrated that the therapy is safe for both short- and long-term use. The effectiveness and safety of treating 74 vitiligo patients with khellin encapsulated in L-phenylalanine stabilised phosphatidylcholine liposomes in conjunction with ultraviolet A/ultraviolet B (UVA/UVB) light therapy (KPLUV) were later studied in an open clinical trial. It was demonstrated that the therapy was quite successful and had no negative side effects.

11. Conclusion:

Ammi visnaga L., also referred to as khella or toothpick weed, is a plant that has been used medicinally for a very long time in many different cultures all over the world. Numerous illnesses, such as renal problems, diabetes, asthma, and skin conditions like vitiligo, have historically been treated with it. The scientific underpinnings of these age-old applications are now being investigated in contemporary research, with encouraging findings for certain ailments. The plant has been used for many different diseases such as vitiligo, infections, inflammation, kidney illness, and diabetes. The different active constituents such as γ -pyrones accountable for numerous therapeutic attributes of the plant are visnagin and khellin. Khellin is being researched for its potential to treat vitiligo in conjunction with light therapy when it is encapsulated in liposomes or other nanocarriers. *Ammi visnaga L.* is generally harmless, although it can have negative effects and interact with some drugs. Available in various forms (capsules, tablets, tea, tincture, creams), Prior to use, it is advised to speak with a healthcare provider. *Ammi visnaga L.* is a plant that has been used for many traditional purposes, and there is growing scientific evidence to support these uses as well as a variety of possible health benefits. To completely comprehend its efficacy and safety under particular circumstances, more research is required.

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31) Ali Esmail Al-Snafi College of Medicine, Thi qar University, Nasiriyah, P O Box 42, Iraq.

